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THE SHARP-TAILED SPARROW (*AMMODRAMUS*
CAUDACUTUS) AND ITS GEOGRAPHICAL
RACES.

BY JONATHAN DWIGHT, JR.

Plate IV.

THE SHARP-TAILED SPARROW is a bird that can boast of considerable antiquity among North American species and it has been figured more than once by early writers, but the two geographical races that have been described of late years are now figured for the first time on the accompanying plate. The specific name dates from 1788, when the bird was called by Gmelin *Oriolus caudacutus* (Gmelin, Syst. Nat., I, pt. i., 1788, 394). His description, however, is practically a translation into Latin of Pennant's description of a bird he calls the Sharp-tailed Oriole (Pennant, Arctic Zoöl., II, 1785, 261), which Latham also describes (Latham, Synop. Birds, I, pt. 2, 1782, 448, pl. xvii), giving a fairly recognizable colored plate and stating that he is indebted to Pennant for the drawing of the bird as well as for the description. Neither Pennant nor Latham made use of any scientific name and therefore Gmelin becomes the authority for

a name that still survives. That it is applicable to true *caudacutus*, and not to either of the subspecies, becomes most probable when we read Gmelin's description in conjunction with Latham's plate, both based on the same material, a specimen from New York in Mrs. Blackburn's collection. We read, "pectus, femora et crissum pallide flavescentia, maculis fuscis," a statement which seems to indicate the paler buff and distinct streaking of *caudacutus* as compared with *nelsoni*, and other parts of the description contribute to show that pale *subvirgatus* was not the bird in hand,—these being the three forms to which the old description might apply.

Wilson, apparently unaware of previous recognition, figured and described an undoubted *caudacutus*, which he named *Fringilla caudacuta*, Sharp-tailed Finch (Wilson, Amer. Orn., IV, 1811, 70, pl. xxxiv, f. 3), and Audubon also figured and accurately described the species (Audubon, Orn. Biog., II, 1834, 281, pl. cxlix, V, 1839, 499; Birds Am. III. 3, 1841, 108, pl. clxxliv.). It is again poorly figured by DeKay (Zool. N. Y., pt. ii, 1844, 164, pl. 67, f. 154) and from him received the curious name of 'Quail-head,' so called from a fancied resemblance to the markings of the Bob-white.

The name *caudacutus*, once applied, seems to have been adopted by all later writers, save Nuttall (who saw fit to call the bird *Fringilla littoralis* for reasons best known to himself), and consequently the bird has not been burdened with the multiplicity of names that so often fall to the lot of early described species.

In 1875 a smaller, brighter colored race was separated under the name *nelsoni* (Allen, Proc. Bost. Soc. N. H., xvii, March, 1875, 293) on the evidence of a number of specimens obtained by Mr. Edward W. Nelson and others on the Calumet Marshes near Ainsworth, Illinois, in September and October, 1874. This has proved to be the inland representative of its strictly littoral relatives.

In 1887 I described a race from the marshes of New Brunswick, Canada (Dwight, Auk, IV, July 1887, 233) to which I applied the name *subvirgatus*. It is a comparatively pale race that seems to have closer affinities with *nelsoni* than with its nearer breeding neighbor *caudacutus*, and its recognition raises interesting questions of distribution yet to be solved.

In 1891 a race called *becki* was described from California (Ridgway, Proc. U. S. Nat. Mus., XIV, 1891, 483) on the strength of a single specimen. This proved to be a straggling *nelsoni* so that *becki* became a mere synonym.

I have briefly sketched the history of the Sharp-tailed Sparrow and its races and only touched upon a few essential points, because it is beyond the scope of the present paper to treat the subject exhaustively. It is rather my purpose to emphasize by collation the facts of which we are already possessed and call attention to the gaps in our knowledge of these birds, well-known as they may seem to be.

PLUMAGE.

First of all let us grasp the characters by which the three forms may be distinguished. I went over them at some length in my early article and to-day, after a lapse of nine years, having examined fully five times as much material as was originally before me, I find that there is little to modify the conclusions then reached.

Ammodramus caudacutus is, at all seasons, so distinctly streaked below with black, that seldom does a specimen present itself that can for a moment be confounded with either of the other races, when once this difference is appreciated by specimens in hand. Besides, the birds are large, with large bills and are richly colored when in unworn plumage, although with all the members of this genus the feathers are rapidly and extensively abraded. There is considerable individual variation, and, it may be noted, winter specimens from South Carolina are as a rule richer in color and more heavily streaked than northern birds.

Ammodramus caudacutus nelsoni is a small form, this being most readily apparent in the bill and length of wing. In coloration it is very similar to *caudacutus*, though usually richer in browns and buffs, especially the ochraceous, buffy yellow wash of the breast and flanks. The streaking below is obscure, the lines dusky, suffused and narrow as compared with the other forms. In spring plumage, and occasionally in the fall, the lines are more definite yet characteristically narrow.

Ammodramus caudacutus subvirgatus is intermediate in size between *caudacutus* and *nelsoni*. It lacks the distinct streaking of

the former and the bright colors of the latter, being a pale grayish looking bird, and the edgings of the back feathers are ashly or pearl-gray, according to season, instead of pure white, as in *nelsoni*. The accompanying plate is intended to show these differences, and on it are figured the type of *subvirgatus* (No. 1261 ♂ adult, Hillsborough, New Brunswick, July 19, 1886, J. Dwight, Jr.), and a breeding male *nelsoni* taken by Dr. Louis B. Bishop in Towner Co., North Dakota, July 5, 1895 (L. B. B. No. 2071). It seems preferable to thus compare two breeding males rather than figure the type of *nelsoni* which, taken in the autumn, is very possibly a migrant. The coloring is most excellent save in the tarsus and foot of *nelsoni*, which should be of a purplish flesh color. The bills do not show the differences in size that usually are obvious.

In order to bring out as definitely as possible the points of difference (appreciable at any season in all birds, save those in first plumage) between these allied races I will present them in parallel columns :

	<i>caudacutus.</i>	<i>nelsoni.</i>	<i>subvirgatus.</i>
Lateral crown stripes.	Deep brown.	Deep, rich brown.	Paler, greenish brown.
Nape and back.	Browns prevail.	Browns prevail.	Grays prevail.
Outer edgings of back feathers.	Ashy or buffy.	White and conspicuous.	Ashy or pearl-gray and obscure.
Edgings of secondaries and tertiaries.	Rusty.	Bright, rusty buff.	Paler.
Breast and sides of head.	Buffy and ochraceous tints intense.	Buffy and ochraceous tints more intense.	Tints pale.
Breast and flank streaks.	Distinct black and broad.	Obscure, or suffused and narrow.	Obscure, or suffused and medium width.
Abdomen.	Clear white.	Clear white.	Dingy white.
Bill.	Large and long.	Small and short.	Medium.
Measurements.	Largest size.	Smallest size.	Medium size.

Typical birds are easily recognized when birds of like season are compared, but difficulties arise in determining certain fall migrants or winter birds (of which there are a large number in collections) that show intergradation between *nelsoni* and *subvirgatus*. They are taken on the Atlantic coast at various points

and we can only suppose they come from unknown breeding grounds. When we realize that *nelsoni* has not been recorded as breeding east of about 87° W. long. while *subvirgatus* has not been found west of about 70° W. long., there is ample ground for such supposition.

DISTRIBUTION.

Ammodramus caudacutus is restricted in the breeding season to the salt marshes of the Atlantic coast from Virginia to Massachusetts. North of the latter named State, in the limited marshes of the New Hampshire and Maine coasts, it is probable that *subvirgatus* would be found. In fact a few stragglers have been secured that, singularly enough, approach more nearly to *nelsoni* than to *caudacutus* as would naturally be expected. One specimen is from Cambridge, Mass., May 31, another from Revere, Mass., June 7, and a third from North Madison, Conn., June 9. These birds may have been late migrants but the probability is they were breeding. It is obvious therefore that breeding specimens from the Maine coast are greatly to be desired. A few *caudacutus* linger through the winter as far north as New Jersey (Stone, Birds E. Pa. and N. J., 1894, 114), the bulk passing to the South Atlantic States and even reaching Tarpon Springs, Florida, on the Gulf coast (Scott, Auk, VI, 1889, 322).

A. c. nelsoni has been sparingly found during the breeding season in Northern Illinois, in Wisconsin, in Minnesota, in Kansas, in the Dakotas, and in Manitoba. It seems to be a comparatively rare species and spring records are few and far between. Large numbers of migrants are found, however, at many points on the Atlantic coast from Massachusetts to South Carolina, they have been taken at Corpus Christi, Texas (Chapman, Bull. Am. Mus. N. H., III, No. 2, 223), and a straggler to the vicinity of San Francisco, California, was described as a new race, to which reference has already been made. It is probable that the birds found at Galveston (Nehrling, Bull. N. O. C., VII, 1882, 12) were of this race and not *caudacutus* as recorded, and the same may be true of the record of *caudacutus* for Ottawa, Ontario (E. E. Thompson, Auk, VI, 1889, 204).

A. c. subvirgatus is peculiar to the fresh and salt water marshes of the Maritime Provinces of Canada, especially those bordering on the Bay of Fundy and the Gulf of St. Lawrence. Strangely enough it has never been taken in Nova Scotia, although it undoubtedly occurs there, for I have observed it within two or three miles of the boundary line when rambling over the meadows of the Petitcodiac River in New Brunswick, not far from the type locality. Since my discovery of the birds about ten years ago I have found them breeding at Tignish, Prince Edward Island, where they were recorded as *caudacutus* long before *subvirgatus* was separated (Brewster, Bull. N. O. C., II, 1877, 28), at Bathurst, N. B., and at Rivière du Loup, Quebec, on the south shore of the St. Lawrence. They have also been found a few miles west of the last named place at Kamouraska (Dionne, Oiseaux de Quebec, 1889, 82). West of this I have not found them, neither at L'Islet nor on the marshes between the city of Quebec and Ste. Anne de Beaupré. Consequently there appears to be a wide gap between the headquarters of this form and those of *nelsoni*,—over one thousand miles. In migration the birds pass as far south as South Carolina (Brewster, Auk, VII, 1890, 212) mingling with the true *caudacutus* and *nelsoni* when Massachusetts is reached. I have already spoken of three birds of this race that apparently were stopping to breed in southern New England. One was recorded as *nelsoni* (Henshaw, Auk, III, 1886, 486) and it might well be compared with some of the pale *nelsoni* from the west, but I can absolutely match it with occasional specimens from the type locality of *subvirgatus*, which themselves approach very close to exceptionally pale *nelsoni*. This is to be expected in any large series of birds, especially those which are split into races, but if it should be proved that *subvirgatus* regularly breeds on the same ground as *caudacutus*, the question of considering *nelsoni* as a separate species with *subvirgatus* as its eastern race may be seriously discussed.

HABITS.

A few words about the habits of these birds may not be amiss although there is little to add to what has already been written

by numerous observers. The three races are very much alike in habits and their chief trait is secretiveness. True *caudacutus* may be found on salt marshes hiding successfully under the sheets of sea-weed and drift brought by the tide and left to dry on the banks of the ditches, or nimbly racing through the short grass and weeds peculiar to such localities. Their wheezy gasp of a song may be heard from tussock, stake or block of drift wood and on the least alarm, the birds vanish, generally preferring not to take wing. During the migration they are more reckless in exposing themselves and often cling to tall reeds or perch on them when pursued. They usually go in small bands associated with the other races and with *Ammodramus maritimus*, a species that is a bosom friend at all seasons. The nests are hidden in drift or protected by a tussock of grass.

Of *nelsoni* little seems to be known. Mr. E. W. Nelson has a little to tell of their habits and even states that they "utter a short unmusical song" in the autumn (Nelson, Bull. Essex Inst., VII, 1877, 107). He found them abundant on the Calumet Marshes, near Chicago, Illinois, and observed a few in June, probably breeding. Hitherto no nest has been taken, although a correspondent writes that he secured one some years ago in this very locality. As he sold the nest and eggs, and has lost all the data, and I have been unable to trace the purchaser, I think it best to say no more about it and wait for an authentic set to be secured, before attempting a description. A brief account is given of this race by Goss (Birds of Kansas, 1891, 449) and he speaks of the song as "a short weak unmusical twittering warble." He observed two young in first plumage, of which no specimens have as yet been taken, so far as I know.

Since my description of *subvirgatus* was published nine years ago I have had opportunity nearly every summer to study this bird and yet there is but little to add to my original observations. The birds are scattered rather abundantly in the breeding season over immense tracts of meadow land along the Petitcodiac River in New Brunswick. I have traced them for twenty miles and notice that they most frequent certain damp spots and utilize the narrow ditches as highways. These meadows are diked off from the tide, and are in no sense salt marshes where the tide creeps at will. A

luxuriant growth of grass covers them and, as I have before stated, the Bobolink and Savanna Sparrow are next door neighbors to *subvirgatus*. Quite different are the salt marshes of Prince Edward Island and of the St. Lawrence where the birds have been found. There short grass, bogs and few ditches are the rule, though the birds seem equally at home. They may fly considerable distances when disturbed, but are more likely to dive into the grass and defy all efforts to again flush them. Their flight is much steadier than that of the Savanna Sparrow and lacks the jerky undulations peculiar to that bird. I have already made two attempts to describe the song (Auk, IV, 1887, 239; Chapman's Birds E. N. A. 1895, 297), which varies little from that of *caudacutus* and much resembles the choking gasp of *Ammodramus maritimus*.

All my efforts to secure a nest have proved unsuccessful in spite of having devoted much time to the task. The difficulties of systematic search are many and, so far, chance has not favored me.

In closing I may say that the study of the Sharp-tails is beset with many difficulties and necessitates excursions devoted almost exclusively to their pursuit. Their exasperating shyness is another factor to baffle the bold observer who, regardless of mud and mosquitoes, invades their stronghold; but perseverance must win in the end and it is to be hoped only a few more years will be required before we are in possession of the facts now wanting to complete our knowledge of these marsh-loving birds.

SUMMER BIRDS OF THE ANTHRACITE COAL REGIONS OF PENNSYLVANIA.

BY R. T. YOUNG.¹

THE study of the birds which breed in the anthracite coal belt of Schuylkill, Carbon, and Luzerne Counties, Pa., is one of much interest to the ornithologist.

The fauna of this region is Alleghanian with, however, traces of the Carolinian fauna. Passing to the south of the Blue Mt.,

¹ Read before the Delaware Valley Ornithological Club of Philadelphia.